

SPACE TRANSPORTATION SYSTEM
SPACE SHUTTLE
PAYLOAD FLIGHT ASSIGNMENTS

NOVEMBER 1985

NASA

National Aeronautics
and Space
Administration

CUSTOMER SERVICES DIVISION
WASHINGTON D.C.

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THE AEROSPACE COMMUNITY BY THE CUSTOMER
SERVICES DIVISION OF NASA HEADQUARTERS.
THE FIELDS OF SCIENCE, DEFENSE AND COMMUNICA-
TIONS HAVE SCHEDULED OVER 200 MAJOR
PAYLOADS ON THE SPACE SHUTTLE.

ITS VERSATILITY, COMBINED WITH COMPETITIVE
PRICING, MAKES THE STS THE WORLD LEADER IN
LAUNCH AND RETRIEVAL SERVICES.

AMERICA'S SPACE TRANSPORTATION SYSTEM, THE ONLY

SPACE TRANSPORTATION SYSTEM

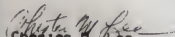
SPACE SHUTTLE

PAYLOAD FLIGHT ASSIGNMENTS

NOVEMBER 1985 BASELINE

NOTE: This schedule reflects the flight assignments as
of 20-NOV-85 10:14:40. Changes will be negotiated with
the payload organizations affected and will be included
in the next monthly update.

APPROVED:


Chester H. Lee
Director, STS Customer Services

HEADING ABBREVIATIONS

MSSN STS mission designation
 eg 41-H First digit: Last digit of fiscal year
 Second digit: Launch site: 1=KSC; 2=VAFB
 Letter: Serial flight in fiscal year

DATE: Year, Month, Day
 ORBITR: Orbiter name
 INCL: Orbit inclination
 ALT: Orbit altitude (n.m.)
 CRW: Number in crew
 DUR: Flight duration
 REQ DATE: Requested date
 UF: Utilization Factor

For further information regarding the
 STS payload assignments, please address:

Chester M. Lee
 Director, STS Customer Services, Mail Code MC
 NASA Headquarters, Washington, DC, U.S.A. 20546
 Telephone: (202) 453-2347 Telex: 89530

	Fy85	Fy86	Fy87	Fy88	Fy89	Fy90
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Flight Rate	8	15	18	18	24	24

ORBITAL FLIGHT TESTS

*** SHUTTLE FLIGHT ASSIGNMENTS FOR PAYLOADS ***
SPACE SHUTTLE MISSIONS AS PERFORMED

MSSN	DATE ORBTR	INCL ALT	CRW DUR	PAYLOAD	CARRIER	OTHER PAYLOADS
OFT-1 KSC	81 4 12 COLUMBIA	40.3 172	2 2	DFI	DFI PLT	OEX
OFT-2 KSC	81 11 12 COLUMBIA	38 140	2 2	OSTA-1 DFI	PALLET DFI PLT	OEX IECM
OFT-3 KSC	82 3 22 COLUMBIA	38 130	2 8	OSS-1 DFI	PALLET DFI PLT	IECM OEX SSIP(1) GAS TEST MLR EEVT
OFT-4 KSC	82 6 27 COLUMBIA	28.5 162	2 7	DOD 82-1 DFI	DFI PLT	OEX IECM MLR CFES NOSL SSIP(2) GAS(1)

09-SEP-85 11:30

COMPLETED OPERATIONAL FLIGHTS
(STS-5 through STS 61-A)

*** SHUTTLE FLIGHT ASSIGNMENTS FOR PAYLOADS ***
NOVEMBER 1985 BASELINE

MSSN	DATE ORBTR	INCLICRWI ALTIDURI	PAYLOAD	CARRIER	OTHER PAYLOADS	UF
31-A 5	82 11 11 COLUMBIA	28.51 4 160 5	SBS-C TELESAT-E	PAM-D PAM-D	IGLOW SSIP(3) IGAS(1)	10.93
31-B 6	83 4 4 CHALLENGER	28.51 4 150 5	TDRS-A	IUS/2	ICFES IMLR,NOSL IGAS(3)	10.94
31-C 7	83 6 18 CHALLENGER	28.51 5 160 6	SPAS-01 OSTA-2 TELESAT-F PALAPA 8-1	MPRESS PAM-D PAM-D	ICFES IMLR IGAS(7)	10.95
31-D 8	83 8 30 CHALLENGER	28.51 5 160 6	PDRS/PFTA OIM INSAT 1-8	PAM-D	ICFES IRME IGAS(4) SSIP(1)	10.59
41-A 9	83 11 28 COLUMBIA	157.01 6 135 10	SPACELAB 1	LM+1P		11.00
41-B 11	84 2 3 CHALLENGER	28.51 5 165 8	SPAS-01A PALAPA 8-2 VESTAR- 6	PAM-D PAM-D	ICES, IEF IC-360c+b IRME,MLR IGAS(5) SSIP(1) IRT	10.71

NOV85

20-NOV-85 10.14

*** SHUTTLE FLIGHT ASSIGNMENTS FOR PAYLOADS ***
NOVEMBER 1985 BASELINE

MSSN	DATE ORBTR	INCLICRWI ALTIDURI	PAYLOAD	CARRIER	OTHER PAYLOADS	UF
41-C 13	84 4 6 CHALLENGER	28.51 5 250 7	IDEF-1 SMM REPAIR	FSS	IRME,IMAX IC-360b SSIP(1)	10.85
41-D 14	84 8 30 DISCOVERY	28.51 6 160 6	OAST-1 SBS-D TELSTAR 3-C SYNCOM IV-2	MPRESS PAM-D PAM-D	ICFES IMAX IRME SSIP(1) ICLOUDS	11.00
41-G 17	84 10 5 CHALLENGER	157.01 7 190 8	OSTA-3 ERBS ILFC/ORS	PALLET MPRESS	IMAX IRME IGAS(8) ITLD IAPE ICANEX	10.71
51-A 19	84 11 8 DISCOVERY	28.51 5 160 8	HS-376 RETV(2) TELESAT-H SYNCOM IV-1	2 PALLET PAM-D	DMOS IRME	10.98
51-C 20	85 1 24 DISCOVERY	0.01 0 0 0	DOD			11.00

NOV85

20-NOV-85 10.14

*** SHUTTLE FLIGHT ASSIGNMENTS FOR PAYLOADS ***
NOVEMBER 1985 BASELINE

MSSN	DATE ORBTR	INCL ALT	CRV DUR	PAYLOAD	CARRIER	OTHER PAYLOADS	UF
51-D 23	85 4 12 DISCOVERY	28.5 250	7 5	TELESAT-1 SYNCOM IV-3	PAM-D	ICFES III IAFE IPPE/SAS ISSIP(2) IGAS(2)	
51-B 24	85 4 29 CHALLENGER	157.0 100	7 7	SPACELAB 3	LM+MPRESS	IGAS(2)	1.00L
51-G 25	85 6 17 DISCOVERY	28.5 190	7 7	SPARTAN-1 MORELOS-A ARABSAT-1B TELSTAR 3-D	MPRESS PAM-D PAM-D PAM-D	IFEE IFPE IADSF IHPT IGAS(6)	10.94W
51-F 26	85 7 29 CHALLENGER	150.0 207	7 7	SPACELAB 2	IG+3P	ISAREX ISTTP ICBDE	1.00D
51-I 27	85 8 27 DISCOVERY	28.5 190	5 8	AUSSAT-1 ASC-1 SYNCOM IV-4	PAM-D PAM-D	IPVTOS ISYNCOM ISALVAGE	10.00V

NOV85

20-NOV-85 10:14

*** SHUTTLE FLIGHT ASSIGNMENTS FOR PAYLOADS ***
NOVEMBER 1985 BASELINE

MSSN	DATE ORBTR	INCL ALT	CRV DUR	PAYLOAD	CARRIER	OTHER PAYLOADS	UF
51-J 28	85 10 3 ATLANTIS	0.0 0	0 0	DOD			1.00D
61-A 30	85 10 30 CHALLENGER	157.0 175	8 7	SPACELAB D-1	LM	IGLOMR	1.00D

NOV85

20-NOV-85 10:14

MANIFESTED FLIGHTS

(STS 61-B to STS 81-N)

Commercial customers making progress payments. NASA programs with authorized budgets and DOD missions with signed Form 100's.

*** SHUTTLE FLIGHT ASSIGNMENTS FOR PAYLOADS *** NOVEMBER 1985 BASELINE

MSSN	DATE ORBTR	INCL ALT	CRW DUR	PAYLOAD	CARRIER	OTHER PAYLOADS	UF
61-B 31	85 11 26 ATLANTIS	28.5 190	7 7	EASE/ACCESS MORELOS-8 SATCOM KU-2 AUSSAT- 2	MPSS PAM-D PAM-D2 PAM-D	CAS(1) CFES IMAX DMOS MPSE	0.99W
61-C 32	85 12 18 COLUMBIA	28.5 175	7 5	MSL- 2 SATCOM KU-1 CAS BRIDGE	MPSS PAM-D2	HH-G1 IR-IE HPCG IBSE CHAMP SSIP(3) CAS(13)	0.73L
51-L 33	86 1 22 CHALLENGER	28.5 153	7 6	SPARTAN-HALLEY TDRS-B	MPSS IUS/2	ITIS FDE CHAMP RME SSIP(1)	0.99W
61-E 34	86 3 6 COLUMBIA	28.5 190	7 9	ASTRO-1	IG+2P	CHAMP ELRAD IEF SSIP(2) CAS(1)	0.59W
NOV85							20-NOV-85 10:14

*** SHUTTLE FLIGHT ASSIGNMENTS FOR PAYLOADS ***
NOVEMBER 1985 BASELINE

MSSN	DATE	INCL	CRV	PAYLOAD	CARRIER	OTHER	UF
	ORBTR	ALT	DUR			PAYLOADS	
62-A	86 3 20	0.0	0	DOD(V)			1.00D
1	DISCOVERY	0	0				
61-F	86 5 15	28.5	4	IULYSSES	'CENTAUR		1.00D
35	CHALLENGER	110	4				
61-G	86 5 20	28.5	4	IGALILEO	'CENTAUR		1.00D
36	ATLANTIS	110	4				
61-H	86 6 24	28.5	7	IWESTAR VI-S	PAM-D		0.98W
37	COLUMBIA	190	7	IPALAPA 8-3	PAM-D		
				ISKYNET-4A	PAM-D2		
61-M	86 7 22	28.5	6	IEOS-I			0.93W
38	CHALLENGER	154	5	ITDRS-D	IUS/2		
61-J	86 8 18	28.5	5	IHUBBLE SP TELS			1.00D
39	ATLANTIS	320	5				
61-N	86 9 4	0.0	0	DOD			1.00D
40	COLUMBIA	0	0				

NOV85

20-NOV-85 10:14

*** SHUTTLE FLIGHT ASSIGNMENTS FOR PAYLOADS ***
NOVEMBER 1985 BASELINE

MSSN	DATE	INCL	CRV	PAYLOAD	CARRIER	OTHER	UF
	ORBTR	ALT	DUR			PAYLOADS	
61-I	86 9 27	28.5	7	ILDEF-1 RETR			0.88L
41	CHALLENGER	230	5	INSAT 1-C	PAM-D		
62-B	86 9 29	0.0	0	DOD(V)			1.00D
2	DISCOVERY	0	0				
61-K	86 10 27	57.0	7	EOM-1/2	SM+1P+MP		1.00L
42	ATLANTIS	135	7				
61-L	86 11 6	28.5	7	IMSL-3	MPRESS		0.85W
43	COLUMBIA	160	7	IGSTAR-III	PAM-D2		
				ISYNCOM IV-5			
71-B	86 12 6	0.0	0	DOD			1.00D
44	CHALLENGER	0	0				
71-A	87 1 12	28.5	7	IASTRO-2	IG+2P		0.73W
45	ATLANTIS	160	7	IDOD PAM-1	PAM-D2		
71-C	87 1 27	28.5	7	ISHEAL-1	SPOC		0.78W
46	COLUMBIA	190	7	ISPARTAN-2	MPRESS		
				IASC-2	PAM-D		
				ISKYNET-4B	PAM-D2		

NOV85

20-NOV-85 10:14

*** SHUTTLE FLIGHT ASSIGNMENTS FOR PAYLOADS ***
NOVEMBER 1985 BASELINE

MSSNI	DATE ORSTR	INCLICRWI ALTIDURI	PAYLOAD	CARRIER	OTHER PAYLOADS	UF
71-D 47	87 2 16 CHALLENGER	128.51 1601	6 EOS-2 7 TDRS-C	IUS/2		10.93W
71-E 48	87 3 16 ATLANTIS	128.51 1601	7 SLS- 1 7	LM		11.00D
72-A 3	87 3 18 DISCOVERY	188.01 1831	5 SRL- 2 5 IPL OPPTY	1P+MPRESS		
71-F 49	87 3 24 COLUMBIA	128.51 1601	5 MSL- 5 7 DOD PAM- 2 7 DOD PAM- 3	MPRESS PAM-D2 PAM-D2		10.89W
71-G 50	87 4 14 CHALLENGER	128.51 1601	6 ISSBUV- 1 7 EOIM-III 7 MSL- 4(MEA) 7 HS 376-R 7 DOD PAM- 4	MPRESS MPRESS PAM-D PAM-D2		10.75W
71-H 51	87 5 18 ATLANTIS	0.01 01	0 DOD 0			11.00D

NOV85

20-NOV-85 10:14

*** SHUTTLE FLIGHT ASSIGNMENTS FOR PAYLOADS ***
NOVEMBER 1985 BASELINE

MSSNI	DATE ORSTR	INCLICRWI ALTIDURI	PAYLOAD	CARRIER	OTHER PAYLOADS	UF
71-I 52	87 5 27 COLUMBIA	128.51 1601	7 IML- 1 7	LM		11.00D
71-J 53	87 6 9 CHALLENGER	157.01 2451	5 ILDEF-2 (HNC) 4			10.83W
71-K 54	87 7 15 ATLANTIS	128.51 1601	5 MSL- 7 7 INTELSAT VI- 1 7 DOD PAM- 5	MPRESS PAM-D2		11.00W
71-L 55	87 8 4 COLUMBIA	128.51 1601	5 ISSBUV- 2 7 MSL- 6(MEA) 7 SPARTAN-3 7 DOD PAM- 6 7 DOD PAM- 7	MPRESS MPRESS PAM-D2 PAM-D2		11.00W
71-M 56	87 8 18 CHALLENGER	128.51 1931	7 ASTRO-3 7 CRRES	IG+2P		10.83W
71-N 57	87 9 17 ATLANTIS	0.01 01	0 DOD 0			11.00D

NOV85

20-NOV-85 10:14

*** SHUTTLE FLIGHT ASSIGNMENTS FOR PAYLOADS ***
NOVEMBER 1985 BASELINE

MSSN	DATE ORBTR	INCL ALT	CRW DUR	PAYLOAD	CARRIER	OTHER PAYLOADS	UF
71-01 58	87 0 28 COLUMBIA	157.0 256	5 7	SUNLAB- 1 ROSAT	IG+1P		10.99W
81-A1 59	87 10 21 CHALLENGER	0.0 0	0 0	DOD			11.00D
81-B1 60	87 11 9 ATLANTIS	128.5 160	5 7	MSL- 8 SPARTAN 205 RCA-4001 STC D8S-A	MPSS MPSS SCOTS PAM-D2		10.92L
81-C1 61	87 11 16 COLUMBIA	128.5 160	6 7	SSBUV- 3 PL OPPTY SBS- 6 DOD PAM- 8			10.84W
81-D1 62	87 12 22 CHALLENGER	128.5 160	6 7	GALAXY KU-1 DOD PAM- 9 DOD PAM-10			11.00W
81-E1 63	88 1 25 ATLANTIS	0.0 0	0 0	DOD			11.00D

NOV85 20-NOV-85 10:14

*** SHUTTLE FLIGHT ASSIGNMENTS FOR PAYLOADS ***
NOVEMBER 1985 BASELINE

MSSN	DATE ORBTR	INCL ALT	CRW DUR	PAYLOAD	CARRIER	OTHER PAYLOADS	UF
81-F1 64	88 2 2 COLUMBIA	128.5 160	6 7	EOM- 3 STC D8S-8 DOD PAM-11	IG+1P PAM-D2 PAM-D2		10.95W
81-G1 65	88 2 23 CHALLENGER	157.0 200	7 7	SPACELAB J	LM		11.00D
81-H1 66	88 3 24 COLUMBIA	128.5 160	5 7	MSL- 9 SPARTAN 206 EURECA DOD PAM-12	MPSS MPSS PAM-D2		10.86W
82-A1 4	88 4 1 DISCOVERY	0.0 0	0 0	DOD(V)			11.00D
81-I1 67	88 4 6 ATLANTIS	128.5 160	4 2	VRM	CENTAUR		11.00D
81-J1 68	88 5 4 CHALLENGER	0.0 0	0 0	DOD			11.00D
81-K1 69	88 6 8 ATLANTIS	128.5 160	5 7	SSBUV- 4 CRO DOD PAM-13			11.00W

NOV85 20-NOV-85 10:14

*** SHUTTLE FLIGHT ASSIGNMENTS FOR PAYLOADS ***
NOVEMBER 1985 BASELINE

MSSN	DATE ORBTR	INCL ALT	CRW DUR	PAYLOAD	CARRIER	OTHER PAYLOADS	UF
81-L 70	88 6 14 COLUMBIA	28.5 160	5 7	MSL-10 SPARTAN 211 IPL OPPTY DOD PAM-14	MPSS MPSS PAM-D2		10.73L
82-B 5	88 7 15 DISCOVERY	199.0 160	5 7	ICOB IPL OPPTY			1.00W
81-M 71	88 7 20 CHALLENGER	128.5 160	7 7	ISLS- 2	LM		1.00D
81-N 72	88 8 10 ATLANTIS	10.0 01 0	0 1	DOD			1.00D
NOV85					20-NOV-85	10 14	

STS CUSTOMER REQUIREMENTS

Commercial customers who have made earnest money payments but have not begun making progress payments. Commercial customers will be added to shuttle flights with receipt of progress payments. NASA programs with authorized budgets and DOD missions with signed Form 100's.

STS CUSTOMER REQUIREMENTS FOR 1988

MON	COMMERCIAL REQUIREMENTS	BOOKING DATE	DOD REQUIREMENTS	NASA REQUIREMENTS	OTHER REQUIREMENTS
JAN	CBSC-1	184 10 15		SPARTAN 207	NONE
	VESTAR-8	184 1 10			
FEB	STC DBS-F	184 5 31		MSL-11	NONE
MAR				NONE	NONE
	VESTAR-A	184 1 10			
APR	NONE			MSL-12	NONE
				SPARTAN 204	
MAY	STC DBS-C	184 7 31	NONE		NONE
JUN	INTELSAT VI-3	185 5 31	DOD PAM-15	NONE	NONE
	ITALSAT-1	183 5 10			
	RCA-4002	185 8 11			
	VESTAR-8	184 1 10			
JUL	SBTS-A3	182 8 25	DOD PAM-16	MSL-13	NONE
	INMARSAT II-1	185 7 23			
				SPARTAN 209	
AUG	RCA-4003	184 4 21		LEASECRAFT-101	NONE

STS CUSTOMER REQUIREMENTS FOR 1988

MON	COMMERCIAL REQUIREMENTS	BOOKING DATE	DOD REQUIREMENTS	NASA REQUIREMENTS	OTHER REQUIREMENTS
SEP	C2-SPACELINES	185 9 19	DOD(V)	DARK SKY	NONE
	CBSC-2	184 10 15	DOD PAM-17	TSS-1	
	EURECA RETR	184 12 4			
	INTELSAT VI-4	185 5 31			
	SPACELAB D-2	185 10 7			
	SPACENET-IV	185 1 23			
OCT	INSAT 1-D	185 11 15	DOD PAM-18	MSL-14	NONE
	SPACELAB D-4	184 4 9		SHEAL-2	
				SPARTAN 210	
NOV	GALAXY KU-2	184 9 11	DOD PAM-19	EDM-4	NONE
	USSB-A	185 7 25		LAGEOS-2	
DEC	NONE		DOD	EUVE	NONE
			DOD	INSAT	
			DOD(V)		

STS CUSTOMER REQUIREMENTS FOR 1980

MON	COMMERCIAL REQUIREMENTS	BOOKING DATE	DOD REQUIREMENTS	NASA REQUIREMENTS	OTHER REQUIREMENTS
JAN	IFASSC-1 IORION-A IWESTAR-9	185 1 185 3 11 184 1 19	DOD PAM-20	IMSL-15 SPARTAN 208	NONE
FEB	IUSSB-B	185 7 25	DOD PAM-21	IML-2 LEASECRAFT-RET	NONE
MAR	IRCA-4004 IWESTAR-C INMARSAT 11-3	185 8 1 184 1 19 185 7 23	NONE	IMSL-16 SUNLAB-2	NONE
APR	IFASSC-2 IORION-B	185 1 1 185 4 24	DOD DOD PAM-22	NONE	NONE
MAY	NONE		DOD PAM-23	IMSL-17	NONE
JUN	IUSSB-C	184 5 15	DOD DOD PAM-24	IWAMDI	NONE
JUL	IFASSC-3 INTELSAT VI-6 IORION-C ITELESAT-L	185 1 1 181 3 16 185 4 24 181 7 6	DOD(V) DOD PAM-25	IMAST-1 IMSL-18 IOSTA-7	NONE
AUG	NONE		DOD PAM-26	IHUB SP TEL RET LEASECRAFT-102	NONE

STS CUSTOMER REQUIREMENTS FOR 1980

MON	COMMERCIAL REQUIREMENTS	BOOKING DATE	DOD REQUIREMENTS	NASA REQUIREMENTS	OTHER REQUIREMENTS
SEP	IRCA-4005 ISBTS-A4	184 4 2 182 8 25	DOD(V) DOD PAM-27	IACS IMSL-19 ISLS-3	NONE
OCT	INTELSAT VI-7 IORION-D	181 3 16 185 4 24	NONE	IUARS	IGOS-I INOAA-K
NOV	NONE		NONE	IOM-5	NONE
DEC	ISAX	184 10 31	NONE	ISP PLASHA-1	NONE

STS CUSTOMER REQUIREMENTS FOR 1990

MONI	COMMERCIAL	BOOKING	DOD	NASA	OTHER
REQUIREMENTS	DATE	REQUIREMENTS	REQUIREMENTS	REQUIREMENTS	REQUIREMENTS
JAN	INTELSAT VI- 8181 3 16	NONE	SUNLAB- 3	GOES-J	
	WESTAR-10 184 1 19				
FEB	NONE		OSTA-9	NONE	
MAR	TELESAT-K 185 7 23	NONE	ILDEF-2 RETR	NONE	
APR	INTELSAT VI- 9181 3 16	NONE	OMV	NONE	
JUN	IRCA-3001 185 8 1	NONE	NONE	NONE	
JUL	NONE		ICFMF- 1	NONE	
			IMAST- 2		
AUG	NONE		IMARS OBSERVER	INOAA-L	
SEP	NONE		ISLS- 4	NONE	
OCT	INTELSAT VI-10181 3 16	NONE	IEOM- 6	NONE	
			ISHEAL- 3		
NOV	TELESAT-M 181 7 6	NONE	NONE	NONE	
DEC	NONE		IRADARSAT	NONE	

PAYLOAD DATA FOR OPTION NOV85

19-NOV-85 11:01

PAYLOAD NAME	CARRIER	MSN	FLT	DATE	AVL	DATE	8KG	DATE
ACTS	PAM-D	NA	0	0	0	89	0	1
ARABSAT-1B	PAM-D	51-G	85	6	17	85	5	1
ASC- 1	PAM-D	51-I	85	8	27	85	9	1
ASC- 2	PAM-D	71-C	87	1	27	86	9	1
ASTRO-1	IG+2P	61-E	86	3	6	86	3	6
ASTRO-2	IG+2P	71-A	87	1	12	86	10	27
ASTRO-3	IG+2P	71-M	87	8	18	87	7	10
AUSSAT- 1	PAM-D	51-I	85	8	27	85	7	1
AUSSAT- 2	PAM-D	61-B	85	11	26	85	10	1
C2-SPACELINES		NA	0	0	0	88	9	1
CBSC- 1	PAM-D	NA	0	0	0	88	1	1
CBSC- 2	PAM-D	NA	0	0	0	88	9	1
ICFMF- 1	PALLET	NA	0	0	0	90	7	1
ICOB		82-B	88	7	15	88	4	1
ICRRES		71-M	87	8	18	87	6	1
DARK SKY	IG+2P	NA	0	0	0	88	9	1
DBS LUX-A	PAM-D	NA	0	0	0	90	9	9
DBS LUX-B	PAM-D	NA	0	0	0	90	9	9
DBS LUX-C	PAM-D	NA	0	0	0	90	9	9
DOD		51-C	85	1	24	84	12	2
DOD		51-J	85	10	3	85	9	1
DOD		71-B	86	12	6	86	11	1
DOD		71-H	87	5	18	87	5	1
DOD		NA	0	0	0	88	12	1
DOD		81-A	87	10	21	87	10	1

PAYLOAD DATA FOR OPTION NOV85				19-NOV-85 11:01		
PAYLOAD NAME	CARRIER	MSSN	FLT DATE	AVL DATE	BKG DATE	
DOD		81-J	88 5 4	88 4 1	0 0 0	
DOD		81-E	88 1 25	88 1 1	0 0 0	
DOD		NA	0 0 0	88 8 1	0 0 0	
DOD		NA	0 0 0	88 12 1	0 0 0	
DOD		NA	0 0 0	89 6 1	0 0 0	
DOD		NA	0 0 0	89 4 1	0 0 0	
DOD		71-N	87 9 17	87 9 1	0 0 0	
DOD		61-N	86 9 4	86 9 1	0 0 0	
DOD PAM- 1	PAM-D2	71-A	87 1 12	86 8 22	0 0 0	
DOD PAM- 2	PAM-D2	71-F	87 3 24	86 11 7	82 3 23	
DOD PAM- 3	PAM-D2	71-F	87 3 24	86 12 19	82 3 23	
DOD PAM- 4	PAM-D2	71-G	87 4 14	87 2 20	82 3 23	
DOD PAM- 5	PAM-D2	71-K	87 7 15	87 4 3	82 3 23	
DOD PAM- 6	PAM-D2	71-L	87 8 4	87 5 15	82 3 23	
DOD PAM- 7	PAM-D2	71-L	87 8 4	87 6 26	82 3 23	
DOD PAM- 8	PAM-D2	81-C	87 11 16	87 8 7	82 3 23	
DOD PAM- 9	PAM-D2	81-D	87 12 22	87 9 18	82 3 23	
DOD PAM-10	PAM-D2	81-D	87 12 22	87 10 30	82 3 23	
DOD PAM-11	PAM-D2	81-F	88 2 2	87 12 15	82 3 23	
DOD PAM-12	PAM-D2	81-H	88 3 24	88 2 5	82 3 23	
DOD PAM-13	PAM-D2	81-K	88 6 8	88 3 18	82 3 23	
DOD PAM-14	PAM-D2	81-L	88 6 14	88 4 20	82 3 23	
DOD PAM-15	PAM-D2	NA	0 0 0	88 6 10	82 3 23	
DOD PAM-16	PAM-D2	NA	0 0 0	88 7 22	82 3 23	
DOD PAM-17	PAM-D2	NA	0 0 0	88 9 2	82 3 23	

PAYLOAD DATA FOR OPTION NOV85				19-NOV-85 11:01		
PAYLOAD NAME	CARRIER	MSSN	FLT DATE	AVL DATE	BKG DATE	
DOD PAM-18	PAM-D2	NA	0 0 0	88 10 14	82 3 23	
DOD PAM-19	PAM-D2	NA	0 0 0	88 11 25	82 3 23	
DOD PAM-20	PAM-D2	NA	0 0 0	89 1 13	82 3 23	
DOD PAM-21	PAM-D2	NA	0 0 0	89 2 24	82 3 23	
DOD PAM-22	PAM-D2	NA	0 0 0	89 4 7	82 3 23	
DOD PAM-23	PAM-D2	NA	0 0 0	89 5 12	82 3 23	
DOD PAM-24	PAM-D2	NA	0 0 0	89 6 16	82 3 23	
DOD PAM-25	PAM-D2	NA	0 0 0	89 7 21	82 3 23	
DOD PAM-26	PAM-D2	NA	0 0 0	89 8 25	82 3 23	
DOD PAM-27	PAM-D2	NA	0 0 0	89 9 20	82 3 23	
DOD(V)		62-A	86 3 20	86 3 1	0 0 0	
DOD(V)		NA	0 0 0	88 9 1	0 0 0	
DOD(V)		NA	0 0 0	88 12 1	0 0 0	
DOD(V)		NA	0 0 0	89 9 1	0 0 0	
DOD(V)		NA	0 0 0	89 7 1	0 0 0	
DOD(V)		82-A	88 4 1	88 4 1	0 0 0	
DOD(V)		62-B	86 9 29	86 9 1	0 0 0	
DOD-PATIE	ILM	NA	0 0 0	87 6 1	85 6 27	
EASE/ACCESS	IMPESS	61-B	85 11 26	85 11 1	83 10 18	
EOIM-III	IMPESS	71-C	87 4 14	86 9 1	85 8 8	
EOM- 3	IG+IP	81-F	88 2 2	87 10 1	82 9 18	
EOM- 4	IG+IP	NA	0 0 0	88 11 1	83 7 11	
EOM- 5	IG+IP	NA	0 0 0	89 11 1	83 7 11	
EOM- 6	IG+IP	NA	0 0 0	90 10 1	83 7 11	
EOM- 7	IG+IP	NA	0 0 0	91 10 1	83 7 11	

PAYLOAD DATA FOR OPTION NOV85							19-NOV-85 11:01		
PAYLOAD NAME	CARRIER	MSSN	FLT DATE	AVL DATE	BKG DATE				
EOM- 8	IG+IP	NA	0 0 0	92 10	1	83 7 11			
EOM- 9	IG+IP	NA	0 0 0	93 10	1	83 7 11			
EOM-1/2	SM+IP+MP	61-K	86 10 27	86 8	1	83 11 2			
EOM-10	IG+IP	NA	0 0 0	94 10	1	83 7 11			
EOM-11	IG+IP	NA	0 0 0	95 10	1	83 7 11			
EOM-12	IG+IP	NA	0 0 0	96 10	1	83 7 11			
EOS-1		61-M	86 7 22	85 11	1	81 6 20			
EOS-2		71-D	87 2 16	86 6	1	81 6 20			
ERBS		41-G	84 10 5	84 5	1	79 6 15			
EURECA		81-H	88 3 24	88 3	1	84 12 4			
EURECA RETR		NA	0 0 0	88 9	1	84 12 4			
EUVE		NA	0 0 0	88 12	1	84 6 6			
FASCC- 1		NA	0 0 0	89 1	1	85 1 1			
FASCC- 2		NA	0 0 0	89 4	1	85 1 1			
FASCC- 3		NA	0 0 0	89 7	1	85 1 1			
GALAXY KU-1		81-D	87 12 22	87 11	1	84 9 1			
GALAXY KU-2		NA	0 0 0	88 11	1	84 9 1			
GALILEO	CENTAUR	61-G	86 5 20	86 5 21	1	77 9 12			
GAS BRIDGE		61-C	85 12 18	84 8	1	83 6 14			
GOES-J	PAM-D	NA	0 0 0	89 10	1	83 7 20			
GOES-J	PAM-D	NA	0 0 0	90 1	1	83 7 20			
GRO		81-K	88 6 8	88 5	1	79 9 15			
GSTAR-III	PAM-D2	61-L	86 11 6	85 7	1	80 4 7			
HS 376-R	PAM-D	71-G	87 4 14	85 7	1	78 12 12			
HS-376 RETV(2)	2 PALLET	51-A	84 11 8	84 11	2	0 0 0			

PAYLOAD DATA FOR OPTION NOV85							19-NOV-85 11:01		
PAYLOAD NAME	CARRIER	MSSN	FLT DATE	AVL DATE	BKG DATE				
HUB SP TEL RET		NA	0 0 0	89 8	1	83 3 25			
HUBBLE SP TELS		61-J	86 8 18	86 6	1	83 3 25			
IML- 1	LM	71-I	87 5 27	87 5	1	81 6 1			
IML- 2	LM+IP	NA	0 0 0	89 2	1	83 12 22			
INMARSAT II-1	PAM-D	NA	0 0 0	88 7 22	1	85 7 23			
INMARSAT II-3	PAM-D	NA	0 0 0	89 3 22	1	85 7 23			
INSAT 1-B	PAM-D	31-D	83 8 30	83 7	1	77 10 19			
INSAT 1-C	PAM-D	61-I	86 9 27	86 6	1	82 11 13			
INSAT 1-D	PAM-D	NA	0 0 0	88 10	1	85 11 15			
INTELSAT VI- 1		71-K	87 7 15	87 6	1	85 9 23			
INTELSAT VI- 2		NA	0 0 0	87 1	1	81 3 16			
INTELSAT VI- 3		NA	0 0 0	88 6	1	85 5 31			
INTELSAT VI- 4		NA	0 0 0	88 9	1	85 5 31			
INTELSAT VI- 5		NA	0 0 0	91 9	1	81 3 16			
INTELSAT VI- 6		NA	0 0 0	89 7	1	81 3 16			
INTELSAT VI- 7		NA	0 0 0	89 10	1	81 3 16			
INTELSAT VI- 8		NA	0 0 0	90 1	1	81 3 16			
INTELSAT VI- 9		NA	0 0 0	90 4	1	81 3 16			
INTELSAT VI-10		NA	0 0 0	90 10	1	81 3 16			
INTELSAT VI-11		NA	0 0 0	91 1	1	81 3 16			
ITALSAT-1	PAM-D2	NA	0 0 0	88 6	1	83 5 10			
ILAGEOS- 2	IRIS	NA	0 0 0	88 11	1	85 5 31			
ILDEF-1		41-C	84 4 6	84 1	1	77 7 26			
ILDEF-1 RETR		61-I	86 9 27	85 1	1	77 7 26			
ILDEF-2 (HNC)		71-J	87 6 9	87 5	1	84 6 1			

PAYLOAD DATA FOR OPTION NOV85							10-NOV-85 11:01		
PAYLOAD NAME	CARRIER	MSSN	FLT DATE	AVL DATE	BKG DATE				
ILDEF-2 RETR		NA	0 0 0	00 3 1	00 9 22				
LEASECRAFT-101		NA	0 0 0	00 8 24	04 1 11				
LEASECRAFT-102		NA	0 0 0	00 8 1	04 1 11				
LEASECRAFT-RET		NA	0 0 0	00 2 1	04 1 11				
LFC	MPRESS	NA	0 0 0	04 1 1	01 12 21				
LFC/ORS	MPRESS	41-G	04 10 5	04 7 1	79 9 15				
MARS OBSERVER		NA	0 0 0	00 8 20	05 7 25				
MAST- 1	PALLET	NA	0 0 0	00 7 1	04 4 10				
MAST- 2	PALLET	NA	0 0 0	00 7 1	04 4 10				
MORELOS-A	PAM-D	51-G	05 6 17	05 5 1	02 6 1				
MORELOS-B	PAM-D	61-B	05 11 26	05 9 1	02 6 1				
MSAT		NA	0 0 0	00 12 1	05 2 21				
MSL- 2	MPRESS	61-C	05 12 18	05 8 1	79 9 15				
MSL- 3	MPRESS	61-L	06 11 6	05 12 1	77 9 12				
MSL- 4 (MEA)	MPRESS	71-G	07 4 14	06 3 1	03 8 17				
MSL- 5	MPRESS	71-F	07 3 24	06 4 1	00 9 15				
MSL- 6 (MEA)	MPRESS	71-L	07 8 4	06 10 1	79 9 15				
MSL- 7	MPRESS	71-K	07 7 15	07 3 1	03 8 17				
MSL- 8	MPRESS	81-B	07 11 0	07 4 1	01 7 7				
MSL- 9	MPRESS	81-H	08 3 24	07 9 1	03 8 17				
MSL-10	MPRESS	81-L	08 6 14	07 10 1	79 9 15				
MSL-11	MPRESS	NA	0 0 0	00 2 1	03 8 17				
MSL-12	MPRESS	NA	0 0 0	00 4 1	02 9 18				
MSL-13	MPRESS	NA	0 0 0	00 7 1	03 8 17				
MSL-14	MPRESS	NA	0 0 0	00 10 1	03 12 22				

PAYLOAD DATA FOR OPTION NOV85							10-NOV-85 11:01		
PAYLOAD NAME	CARRIER	MSSN	FLT DATE	AVL DATE	BKG DATE				
MSL-15	MPRESS	NA	0 0 0	00 1 1	03 12 22				
MSL-16	MPRESS	NA	0 0 0	00 3 1	03 12 22				
MSL-17	MPRESS	NA	0 0 0	00 5 1	03 12 22				
MSL-18	MPRESS	NA	0 0 0	00 7 1	03 12 22				
MSL-19	MPRESS	NA	0 0 0	00 9 1	03 12 22				
NOAA-K		NA	0 0 0	00 10 1	03 9 2				
NOAA-L		NA	0 0 0	00 8 1	03 9 2				
NOAA-M		NA	0 0 0	01 3 1	03 9 2				
NOAA-N		NA	0 0 0	02 8 1	03 9 2				
NOAA-O		NA	0 0 0	03 3 1	03 9 2				
NOAA-P		NA	0 0 0	04 8 1	03 9 2				
IOAST-1	MPRESS	41-D	04 8 30	04 4 1	70 1 22				
IOAST-3	MPRESS	NA	0 0 0	07 6 1	01 7 7				
IOIM		31-D	03 8 30	03 8 1	03 5 4				
IOMV		NA	0 0 0	00 4 1	04 10 25				
IORION-A	PAM-D2	NA	0 0 0	00 1 1	05 3 11				
IORION-B	PAM-D2	NA	0 0 0	00 4 1	05 4 24				
IORION-C	PAM-D2	NA	0 0 0	00 7 1	05 4 24				
IORION-D	PAM-D2	NA	0 0 0	00 10 1	05 4 24				
IOSTA-11	PALLET	NA	0 0 0	03 4 1	05 4 18				
IOSTA-2	MPRESS	7	03 6 18	03 4 20	70 1 22				
IOSTA-3	PALLET	41-G	04 10 5	04 7 1	70 9 15				
IOSTA-7	PALLET	NA	0 0 0	00 7 1	05 4 18				
IOSTA-9	PALLET	NA	0 0 0	00 2 1	05 4 18				
IPALAPA B-1	PAM-D	7	03 6 18	03 3 1	78 12 12				

PAYLOAD DATA FOR OPTION NOV85						19-NOV-85 11.01					
PAYLOAD NAME	CARRIER	MSSN	FLT DATE	AVL DATE	BKG DATE						
PALAPA 8-2	PAM-D	41-B	84 2 3	83 6 1	78 12 12						
PALAPA 8-3	PAM-D	61-H	86 6 24	86 7 1	84 10 20						
PDRS/PFTA		31-D	83 8 30	82 5 1	76 1 1						
PL OPPTY OR		NA	0 0 0	0 0 0	81 1 1						
RADARSAT		NA	0 0 0	90 12 1	84 10 22						
RCA-3001	SCOTS	NA	0 0 0	90 6 1	85 8 1						
RCA-3002	SCOTS	NA	0 0 0	91 1 1	79 11 16						
RCA-4001	SCOTS	81-B	87 11 9	87 11 1	81 9 2						
RCA-4002	SCOTS	NA	0 0 0	88 6 1	85 8 1						
RCA-4003	SCOTS	NA	0 0 0	88 8 1	84 4 2						
RCA-4004	SCOTS	NA	0 0 0	89 3 1	85 8 1						
RCA-4005	SCOTS	NA	0 0 0	89 9 1	84 4 2						
RCA-4006	SCOTS	NA	0 0 0	91 6 1	85 2 1						
ROSAT		71-O	87 9 28	87 9 1	82 7 2						
SATCOL-A	PAM-D	NA	0 0 0	99 9 9	82 10 18						
SATCOL-B	PAM-D	NA	0 0 0	99 9 9	82 10 18						
SATCOM KU-1	PAM-D2	61-C	85 12 18	85 9 1	79 11 16						
SATCOM KU-2	PAM-D2	61-B	85 11 26	85 9 1	81 9 2						
SAX	IRIS	NA	0 0 0	89 12 1	84 10 31						
SBS- 6		81-C	87 11 16	87 11 1	85 1 25						
SBS-C	PAM-D	31-A	82 11 11	82 11 11	77 2 2						
SBS-D	PAM-D	41-D	84 8 30	84 8 1	79 12 27						
SBS-E	PAM-D	NA	0 0 0	86 10 1	83 4 27						
S8TS-A3	PAM-D	NA	0 0 0	88 7 1	82 8 25						
S8TS-A4	PAM-D	NA	0 0 0	89 9 6	82 8 25						

PAYLOAD DATA FOR OPTION NOV85						19-NOV-85 11.01					
PAYLOAD NAME	CARRIER	MSSN	FLT DATE	AVL DATE	BKG DATE						
SHARE		NA	0 0 0	85 11 1	84 10 5						
SHEAL- 1	SPOC	71-C	87 1 27	86 7 1	84 1 25						
SHEAL- 2	SPOC	NA	0 0 0	88 10 1	81 7 7						
SHEAL- 3	SPOC	NA	0 0 0	90 10 1	83 12 22						
SKYNET-4A	PAM-D2	61-H	86 6 24	86 5 1	82 3 23						
SKYNET-4B	PAM-D2	71-C	87 1 27	86 10 1	82 3 23						
SLS- 1	LM	71-E	87 3 16	87 2 1	77 9 12						
SLS- 2	LM	81-H	88 7 20	88 7 1	84 1 7						
SLS- 3	LM	NA	0 0 0	89 9 1	90 9 15						
SLS- 4	LM	NA	0 0 0	90 9 1	83 12 22						
SMM REPAIR	FSS	41-C	84 4 6	84 4 1	81 8 24						
SOT-1	IG+2P	NA	0 0 0	91 6 1	80 9 15						
SP PLASMA- 1	IG+1P	NA	0 0 0	89 12 1	83 4 11						
SP PLASMA- 2	IG+2P	NA	0 0 0	91 12 1	83 12 22						
SPACELAB 1	LM+1P	41-A	83 11 28	83 9 30	78 5 18						
SPACELAB 2	IG+3P	51-F	85 7 29	85 4 1	76 4 7						
SPACELAB 3	LM+MPRESS	51-B	85 4 29	85 1 22	76 4 4						
SPACELAB D-1	LM	61-A	85 10 30	85 8 15	78 1 3						
SPACELAB D-2	LM	NA	0 0 0	88 9 1	85 10 7						
SPACELAB D-4	IG+2P	NA	0 0 0	88 10 1	84 4 9						
SPACELAB J	LM	81-G	88 2 23	88 1 1	81 6 1						
SPACENET-IV	PAM-D	NA	0 0 0	88 9 1	85 1 23						
SPARTAN 204	MPRESS	NA	0 0 0	88 4 1	85 4 10						
SPARTAN 205	MPRESS	81-B	87 11 9	87 4 1	85 4 10						
SPARTAN 206	MPRESS	81-H	88 3 24	87 7 1	85 4 10						

PAYLOAD DATA FOR OPTION NOV85				19-NOV-85 11:01		
PAYLOAD NAME	CARRIER	MSNN	FLT DATE	AVL DATE	BKG DATE	
SPARTAN 207	IMPRESS	NA	0 0 0	88 1 1	85 4 10	
SPARTAN 208	IMPRESS	NA	0 0 0	89 1 1	85 4 10	
SPARTAN 209	IMPRESS	NA	0 0 0	88 7 1	85 4 10	
SPARTAN 210	IMPRESS	NA	0 0 0	88 10 1	85 4 10	
SPARTAN 211	IMPRESS	81-L	88 6 14	87 10 1	85 4 10	
SPARTAN-1	IMPRESS	51-G	85 6 17	85 5 1	79 11 6	
SPARTAN-2	IMPRESS	71-C	87 1 27	86 9 1	79 11 6	
SPARTAN-3	IMPRESS	71-L	87 8 4	86 12 1	79 11 6	
SPARTAN-HALLEY	IMPRESS	51-L	86 1 22	86 1 1	84 5 23	
SPAS-01		7	83 6 18	83 4 1	78 5 12	
SPAS-01A		41-B	84 2 3	84 1 1	89 9 9	
SRL- 2	IP+MPRESS	72-A	87 3 18	87 2 1	84 10 19	
SS8UV- 1		71-G	87 4 14	86 10 1	85 3 28	
SS8UV- 2		71-L	87 8 4	87 4 1	85 3 28	
SS8UV- 3		81-C	87 11 16	87 10 1	85 3 28	
SS8UV- 4		81-K	88 6 8	88 4 1	85 3 28	
STC DBS-A	IPAM-D2	81-B	87 11 9	86 10 1	85 5 14	
STC DBS-B	IPAM-D2	81-F	88 2 2	86 12 1	85 5 14	
STC DBS-C	IPAM-D	NA	0 0 0	88 5 1	84 7 31	
STC DBS-D	IPAM-D	NA	0 0 0	87 10 1	83 11 1	
STC DBS-E	IPAM-D	NA	0 0 0	87 11 1	84 4 13	
STC DBS-F	IPAM-D	NA	0 0 0	88 2 1	84 5 31	
SUNLAB- 1	IC+IP	71-D	87 9 28	87 5 1	83 8 9	
SUNLAB- 2	IC+IP	NA	0 0 0	89 3 1	83 9 23	
SUNLAB- 3	IC+IP	NA	0 0 0	90 1 1	83 12 22	

PAYLOAD DATA FOR OPTION NOV85				19-NOV-85 11:01		
PAYLOAD NAME	CARRIER	MSNN	FLT DATE	AVL DATE	BKG DATE	
SYNCOM IV-1		51-A	84 11 8	84 3 1	78 11 6	
SYNCOM IV-2		41-D	84 8 30	84 7 1	78 11 6	
SYNCOM IV-3		51-D	85 4 12	85 2 1	78 11 6	
SYNCOM IV-4		51-I	85 8 27	85 7 1	78 11 6	
SYNCOM IV-5		61-L	86 11 6	85 12 1	85 4 23	
TDRS-A	IUS/2	6	83 4 4	83 1 20	78 5 18	
TDRS-B	IUS/2	51-L	86 1 22	85 3 1	77 7 11	
TDRS-C	IUS/2	71-D	87 2 16	86 1 1	84 8 3	
TDRS-D	IUS/2	61-M	86 7 22	85 7 1	84 3 1	
TELESAT-E	PAM-D	31-A	82 11 11	82 11 11	77 3 8	
TELESAT-F	PAM-D	7	83 6 18	83 4 1	77 3 8	
TELESAT-H	PAM-D	51-A	84 11 8	84 10 1	78 9 25	
TELESAT-I	PAM-D	51-D	85 4 12	84 4 1	77 3 8	
TELESAT-J	PAM-D2	NA	0 0 0	92 5 1	84 4 14	
TELESAT-K	PAM-D2	NA	0 0 0	90 3 1	85 7 23	
TELESAT-L	PAM-D2	NA	0 0 0	89 7 1	81 7 6	
TELESAT-M	PAM-D2	NA	0 0 0	90 11 1	81 7 6	
TELESAT-N	PAM-D2	NA	0 0 0	91 2 1	81 7 6	
TELSTAR 3-B	PAM-D2	NA	0 0 0	93 5 1	83 11 30	
TELSTAR 3-C	PAM-D	41-D	84 8 30	84 7 1	79 6 13	
TELSTAR 3-D	PAM-D	51-G	85 6 17	85 5 1	79 6 13	
TEMPS-III-B		NA	0 0 0	86 6 1	84 8 1	
TSS-1	PALLET	NA	0 0 0	88 9 1	85 2 26	
UARS	MMS	NA	0 0 0	89 10 1	84 11 13	
ULYSSES	CENTAUR	61-F	86 5 15	86 5 17	77 10 1	

PAYLOAD DATA FOR OPTION NOV85						19-NOV-85 11.01					
PAYLOAD NAME	CARRIER	MSSN	FLT DATE	AVL DATE	8KG DATE						
USS8-A		NA	0 0 0	88 11 1	85 7 25						
USS8-B		NA	0 0 0	89 2 1	85 7 25						
USS8-C		NA	0 0 0	89 6 1	84 5 15						
VRM	CENTAUR	81-I	88 4 6	88 4 6	83 6 3						
WANDI	SPOC	NA	0 0 0	89 6 1	85 5 16						
WESTAR VI-S	PAM-D	61-H	86 6 24	85 9 1	82 7 15						
WESTAR-6	PAM-D	41-B	84 2 3	84 1 20	83 3 28						
WESTAR-8	PAM-D	NA	0 0 0	88 1 1	84 1 19						
WESTAR-9	PAM-D	NA	0 0 0	89 1 1	84 1 19						
WESTAR-10	PAM-D	NA	0 0 0	90 1 1	84 1 19						
WESTAR-11	PAM-D	NA	0 0 0	92 3 1	84 1 19						
WESTAR-12	PAM-D	NA	0 0 0	92 7 1	84 1 19						
WESTAR-13	PAM-D	NA	0 0 0	94 2 1	84 1 19						
WESTAR-14	PAM-D	NA	0 0 0	95 10 1	84 1 19						
WESTAR-15	PAM-D	NA	0 0 0	98 2 1	84 1 19						
WESTAR-16	PAM-D	NA	0 0 0	99 2 1	84 1 19						
WESTAR-17	PAM-D	NA	0 0 0	0 0 0	84 1 19						
WESTAR-A	PAM-D2	NA	0 0 0	88 3 1	84 1 19						
WESTAR-B	PAM-D2	NA	0 0 0	88 6 1	84 1 19						
WESTAR-C	PAM-D2	NA	0 0 0	89 3 1	84 1 19						
WESTAR-D	PAM-D2	NA	0 0 0	98 4 1	84 1 19						
WESTAR-E	PAM-D2	NA	0 0 0	98 7 1	84 1 19						
WESTAR-F	PAM-D2	NA	0 0 0	99 4 1	84 1 19						

SPACE SHUTTLE CREW ASSIGNMENTS

C - COMMANDER
P - PILOT

MS - MISSION SPECIALIST
PS - PAYLOAD SPECIALIST
SPF - SPACE FLIGHT PARTICIPANT

STS-1
LAUNCH: 12 APR 1981
LANDING: 14 APR 1981
COLUMBIA

C: JOHN W. YOUNG (USN, RET.)
P: ROBERT L. CRIPPEN (CAPT., USN)

STS-2
LAUNCH: 12 NOV 1981
LANDING: 14 NOV 1981
COLUMBIA

C: JOE H. ENGLE (COL., USAF)
P: RICHARD H. TRULY (CAPT., USN)

STS-3
LAUNCH: 22 MAR 1982
LANDING: 30 MAR 1982
COLUMBIA

C: JACK R. LOUSMA (COL., USMC)
P: CHARLES G. FULLERTON (COL., USAF)

STS-4
LAUNCH: 27 JUN 1982
LANDING: 04 JUL 1982
COLUMBIA

C: THOMAS K. MATTINGLY II (CAPT., USN)
P: HENRY W. HARTSFIELD, JR. (USAF, RET.)

STS-5
LAUNCH: 11 NOV 1982
LANDING: 16 NOV 1982
COLUMBIA

C: VANCE D. BRAND (CIVILIAN)
P: ROBERT F. OVERMYER (COL., USMC)
MS: JOSEPH P. ALLEN (PhD - PHYSICS)
MS: WILLIAM B. LENOIR (PhD - SCIENCE)

STS-6
LAUNCH: 04 APR 1983
LANDING: 09 APR 1983
CHALLENGER

C: PAUL J. WEITZ (CAPT., USN, RET.)
P: KAROL J. BOBKO (COL., USAF)
MS: DONALD H. PETERSDN (COL., USAF, RET.)
MS: F. STOREY MUSGRAVE (M.D.)

STS-7
LAUNCH: 18 JUN 1983
LANDING: 24 JUN 1983
CHALLENGER

C: ROBERT L. CRIPPEN (CAPT., USN)
P: FREDERICK H. HAUCK (CAPT., USN)
MS: JOHN M. FABIAN (COL., USAF)
MS: SALLY K. RIDE (PhD - PHYSICS)
MS: NORMAN E. THAGARD (M.D.)

STS-8
LAUNCH: 30 AUG 1983
LANDING: 05 SEP 1983
CHALLENGER

C: RICHARD H. TRULY (CAPT., USN)
P: DANIEL C. BRANDENSTEIN (CDR., USN)
MS: DALE A. GARDNER (LT. CDR., USN)
MS: GILSON S. BLUFORD (MAJ., USAF)
MS: WILLIAM E. THORNTON (M.D.)

STS-9
LAUNCH: 28 NOV 1983
LANDING: 08 DEC 1983
COLUMBIA

C: JOHN W. YOUNG (USN, RET.)
P: BREWSTER H. SHAW, JR. (MAJ., USAF)
MS: OWEN K. GARRIOTT (PhD - ELECTRICAL ENGINEERING)
MS: ROBERT A. PARKER (PhD - ASTRONOMY)
PS: ULF MERBOLD, ESA (PHYSICIST)
PS: BYRON K. LICHTENBERG, MIT (PhD - BIOMEDICAL ENGINEERING)

41-B
LAUNCH: 03 FEB 1984
LANDING: 11 FEB 1984
CHALLENGER

C: VANCE D. BRAND (CIVILIAN)
P: ROBERT L. GIBSON (LT. CDR., USN)
MS: BRUCE McCANDLESS II (CDR., USN)
MS: ROBERT L. STEWART (MAJ., USA)
MS: RONALD E. MCNAIR (PhD - PHYSICS)

41-C
LAUNCH: 06 APR 1984
LANDING: 13 APR 1984
CHALLENGER

C: ROBERT L. CRIPPEN (CAPT., USN)
P: FRANCIS R. SCOBEE (USAF, RET.)
MS: GEORGE D. NELSON (PhD - ASTRONOMY)
MS: TERRY J. HART (M.S. - ELECTRICAL ENGINEERING)
MS: JAMES D. VAN HOFEN (PhD - FLUID MECHANICS)

41-D
LAUNCH: 30 AUG 1984
LANDING: 05 SEP 1984
DISCOVERY

C: HENRY W. HARTSFIELD (USAF, RET.)
P: MICHAEL L. COATS (LT. CDR., USN)
MS: RICHARD A. MULLANE (MAJ., USAF)
MS: STEVEN A. HAWLEY (PhD - ASTRONOMY/ASTROPHYSICS)
MS: JUDITH A. RESNIK (PhD - ELECTRICAL ENGINEERING)
PS: CHARLES D. WALKER (McDONNELL DOUGLAS)

41-G
LAUNCH: 05 OCT 1984
LANDING: 13 OCT 1984
CHALLENGER

C: ROBERT L. CRIPPEN (CAPT., USN)
P: JON A. McBRIDE (CDR., USN)
MS: KATHRYN D. SULLIVAN (PhD - GEOLOGY)
MS: SALLY K. RIDE (PhD - PHYSICS)
MS: DAVID C. LEESTMA (LT. CDR., USN)
PS: MARC GARNEAU (NRCC, CANADA)
PS: PAUL D. SCULLY-POWER (U.S. NAVY CIVILIAN)

51-A
LAUNCH: 08 NOV 1984
LANDING: 16 NOV 1984
DISCOVERY

C: FREDERICK H. HAUCK (CAPT., USN)
P: DAVID M. WALKER (CDR., USN)
MS: ANNA L. FISHER (M.D.)
MS: DALE A. GARDNER (LT. CDR., USN)
MS: JOSEPH P. ALLEN (PhD - PHYSICS)

51-C
LAUNCH: 24 JAN 1985
LANDING: 27 JAN 1985
DISCOVERY

C: THOMAS K. MATTINGLY II (CAPT., USN)
P: LOREN J. SHRIVER (LT. COL., USAF)
MS: JAMES F. BUCHLI (LT. COL., USMC)
MS: ELLISON S. ONIZUKA (MAJ., USAF)
PS: GARY E. PAYTON (MAJ., USAF)

51-D
LAUNCH: 12 APR 1985
LANDING: 17 APR 1985
DISCOVERY

C: KAROL J. BOBKO (COL., USAF)
P: DONALD E. WILLIAMS (CDR., USN)
MS: M. RHEA SEDDON (M.D.)
MS: JEFFREY A. HOFFMAN (PhD - ASTROPHYSICS)
MS: S. DAVID GRIGGS (COL., USAF)
PS: CHARLES D. WALKER (McDONNELL DOUGLAS)
PS: E. JAKE GARN (U.S. SENATE)

51-8
LAUNCH: 29 APR 1985
LANDING: 06 MAY 1985
CHALLENGER

C: ROBERT F. OVERMYER (COL., USMC)
P: FREDERICK D. GREGORY (LT. COL., USAF)
MS: DON L. LIND (PhD - HIGH ENERGY NUCLEAR PHYSICS)
MS: NORMAN E. THAGARD (M.D.)
MS: WILLIAM E. THORNTON (M.D.)
PS: LODEWIJK VAN DEN BERG (EG&G CORP.)
PS: TAYLOR G. WANG (JET PROPULSION LABORATORY)

51-G
LAUNCH: 17 JUN 1985
LANDING: 24 JUN 1985
DISCOVERY

C: DANIEL C. BRANDENSTEIN (CAPT., USN)
P: JOHN O. CREIGHTON (CDR., USN)
MS: SHANNON W. LUCID (PhD - BIOCHEMISTRY)
MS: STEVEN R. MAGEL (LT. COL., USAF)
MS: JOHN M. FABIAN (COL., USAF)
PS: SALMAN ABDELAZIZE AL-SAUD (ARABSAT)
PS: PATRICK BAUDRY (FRANCE)

51-F
LAUNCH: 29 JUL 1985
LANDING: 05 AUG 1985
CHALLENGER

C: CHARLES G. FULLERTON (COL., USAF)
P: ROY D. BRIDGES (COL., USAF)
MS: F. STORY MUSGRAVE (M.D.)
MS: ANTHONY W. ENGLAND (PhD - EARTH & PLANETARY SCIENCE)
MS: KARL G. HEHIZE (PhD - ASTRONOMY)
PS: LOREN W. ACTON (LOCKHEED)
PS: JOHN-DAVID BARTOE (U.S. NAVY CIVILIAN)

51-I
LAUNCH: 24 AUG 1985
LANDING: 01 SEP 1985
DISCOVERY

C: JOE H. ENGLE (COL., USAF)
P: RICHARD O. COVEY (LT. COL., USAF)
MS: JAMES VAN HOFTEN (PhD - FLUID MECHANICS)
MS: JOHN M. LOUNGE (M.S. - ASTROPHYSICS)
MS: WILLIAM F. FISHER (M.D.)

51-J
LAUNCH: 01 OCT 1985
LANDING:
ATLANTIS

C: KAROL BOBKO (COL., USAF)
P: RONALD J. GRABE (LT. COL., USAF)
MS: ROBERT STEWART (COL., USA)
MS: DAVID HILMERS (MAJ., USMC)
PS: WILLIAM A. PALES (MAJ., USAF)

61-A
LAUNCH: 30 OCT 1985
LANDING: 06 NOV 1985
CHALLENGER

C: HENRY W. HARTSFIELD (USAF, RET.)
P: STEVEN R. MAGEL (MAJ., USAF)
MS: JAMES F. BUCHLI (LT. COL., USMC)
MS: GUION S. BLUFORD, JR. (LT. COL., USAF)
MS: BONNIE J. DUNBAR (PhD - BIOMEDICAL ENGINEERING)
PS: REINHARD FURRER (DFVLR) (GERMAN)
PS: ERNST MESSERSCHMID (DFVLR) (GERMAN)
PS: WUBBO OCKELS (DFVLR) (DUTCH)

61-B
LAUNCH: 26 NOV 1985
LANDING: 03 DEC 1985
ATLANTIS

C: BREWSTER H. SHAW, JR. (LT. COL., USAF)
P: BRYAN D. O'CONNOR (LT. COL., USMC)
MS: MARY L. CLEAVE (PhD - CIVIL ENGINEERING)
MS: SHERWOOD C. SPRING (LT. COL., USA)
MS: JERRY L. ROSS (MAJ., USAF)
PS: RUDOLFO NERI VELA (MORELOS)
PS: CHARLES WALKER (McDONNELL DOUGLAS)

61-C
LAUNCH: 18 DEC 1985
LANDING: 23 DEC 1985
COLUMBIA

C: ROBERT L. GIBSON (LT. CDR., USN)
P: CHARLES F. BOLDEN, JR. (MAJ., USMC)
MS: FRANKLIN R. CHANG-DIAZ (PhD - PLASMA PHYSICS)
MS: STEVEN A. HAWLEY (PhD - ASTROPHYSICS)
MS: GEORGE D. NELSON (PhD - ASTRONOMY)
PS: ROBERT CENKER (RCA)
PS: BILL NELSON (U.S. CONGRESSMAN)

51-L
LAUNCH: 22 JAN 1986
LANDING: 28 JAN 1986
CHALLENGER

C: FRANCIS R. SCOBEE (USAF, RET.)
P: MICHAEL J. SMITH (CDR., USN)
MS: JUDITH A. RESNIK (PhD - ELECTRICAL ENGINEERING)
MS: ELLISON ONIZUKA (MAJ., USAF)
MS: RONALD E. MCNAIR (PhD - PHYSICS)
PS: GREGORY JARVIS (HUGHES)
SFP: CHRISTA McAULIFFE (TEACHER IN SPACE)

61-E
LAUNCH: 06 MAR 1986
LANDING: 15 MAR 1986
COLUMBIA

C: JON A. McBRIDE (CDR., USN)
P: RICHARD N. RICHARDS (LT. CDR., USN)
MS: ROBERT A. R. PARKER (PhD)
MS: DAVID C. LEESTMA (LT. CDR., USN)
MS: JEFFREY A. HOFFMAN (PhD)
PS: SAMUEL T. DURRANCE (PhD - JOHN HOPKINS UNIVERSITY)
PS: RONALD A. PARISE (PhD - COMPUTER SCIENCES CORPORATION)

62-A
LAUNCH: 20 MAR 1986
LANDING:
DISCOVERY

C: ROBERT L. CRIPPEN (CAPT., USN)
P: GUY S. GARDNER (LT. COL., USAF)
MS: DALE A. GARDNER (CDR., USN)
MS: JERRY L. ROSS (MAJ., USAF)
MS: RICHARD M. MULLANE (LT. COL., USAF)
PS: EDWARD C. ALDRIDGE, JR. (U.S. AIR FORCE)
PS: BRET WATTERSON (U.S. AIR FORCE)

61-F
LAUNCH: 15 MAY 1986
LANDING: 19 MAY 1986
CHALLENGER

C: FREDERICK H. HAUCK (CAPT., USN)
P: ROY D. BRIDGES (COL., USAF)
MS: DAVID C. HILMERS (MAJ., USMC)
MS: JOHN M. LOUNGE (M.S. - ASTROPHYSICS)

61-G
LAUNCH: 20 MAY 1986
LANDING: 24 MAY 1986
ATLANTIS

C: DAVID M. WALKER (CDR., USN)
P: RONALD J. GRABE (LT. COL., USAF)
MS: NORMAN E. THAGARD (M.D.)
MS: JAMES D. VAN HOFTEN (PhD - FLUID MECHANICS)

61-H
LAUNCH: 24 JUN 1986
LANDING: 01 JUL 1986
COLUMBIA

C: MICHAEL L. COATS (CDR., USN)
P: JOHN E. BLAHA (COL., USAF)
MS: ANNA L. FISHER (M.D.)
MS: JAMES F. BUCHLI (LT. COL., USAF)
MS: ROBERT C. SPRINGER (LT. COL., USMC)
PS: PRATIWI SUDARMO (INDONESIA)
PS: NIGEL WOOD (SQN. LDR. RAF - SKYNET)

61-M
LAUNCH: 22 JUL 1986
LANDING: 27 JUL 1986
CHALLENGER

C: LOWEN J. SHRIVER (LT. COL., USAF)
P: BRYAN D. O'CONNOR (LT. COL., USAF)
MS: SALLY K. RIDE (PhD - PHYSICS)
MS: WILLIAM F. FISHER (M.D.)
MS: MARK C. LEE (CAPT., USAF)
PS: ROBERT WOOD (McDONNELL DOUGLAS)

61-J
LAUNCH: 18 AUG 1986
LANDING: 23 AUG 1986
ATLANTIS

C: JOHN W. YOUNG (USN, RET.)
P: CHARLES F. BOLDEN, JR. (MAJ., USMC)
MS: KATHRYN SULLIVAN (PhD - GEOLOGY)
MS: STEVEN HAWLEY (PhD - ASTRONOMY/ASTROPHYSICS)
MS: BRUCE McCANDLESS (CDR., USN)

CREW ASSIGNMENT UNDER REVIEW

61-N
LAUNCH: 04 SEP 1986
LANDING:
COLUMBIA

61-I
LAUNCH: 27 SEP 1986
LANDING: 01 OCT 1986
CHALLENGER

C: DONALD E. WILLIAMS (CDR., USN)
P: MICHAEL J. SMITH (CDR., USN)
MS: JAMES P. BAGIAN (M.D.)
MS: BONNIE J. DUNBAR (PhD - BIOMEDICAL ENGINEERING)
MS: MANLEY L. "SONNY" CARTER (CDR., USN)
PS: INDIA PAYLOAD SPECIALIST
SFP: JOURNALIST IN SPACE PROJECT

CREW ASSIGNMENT UNDER REVIEW

62-B
LAUNCH: 29 SEP 1986
LANDING:
DISCOVERY

61-K
LAUNCH: 27 OCT 1986
LANDING: 03 NOV 1986
ATLANTIS

C: VANCE D. BRAND (CIVILIAN)
P: S. DAVID GRIGGS (COL., USAF)
MS: ROBERT L. STEWART (MAJ., USA)
MS: OWEN K. GARRIOTT (PhD - ELECTRICAL ENGINEERING)
MS: CLAUDE NICOLLIER, ESA (M.S. - PHYSICS)
PS: MICHAEL LAMPTON (PhD - U. C.-BERKELEY)
PS: BYRON K. LICHTENBERG (PhD - MIT)

CREW ASSIGNMENT UNDER REVIEW
PS: JOHN H. KONRAD (HUGHES)

61-L
LAUNCH: 06 NOV 1986
LANDING: 13 NOV 1986
COLUMBIA

71-B
LAUNCH: 06 DEC 1986
LANDING:
CHALLENGER

CREW ASSIGNMENT UNDER REVIEW

71-A
LAUNCH: 12 JAN 1986
LANDING: 19 JAN 1986
ATLANTIS

CREW ASSIGNMENT UNDER REVIEW
PS: ASTRO-2 PAYLOAD SPECIALIST
PS: ASTRO-2 PAYLOAD SPECIALIST

71-C
LAUNCH: 27 JAN 1987
LANDING: 03 FEB 1987
COLUMBIA

CREW ASSIGNMENT UNDER REVIEW
PS: PETER LONGHURST (SKYNET)
PS: ASC PAYLOAD SPECIALIST

71-D
LAUNCH: 16 FEB 1987
LANDING: 23 FEB 1987

CREW ASSIGNMENT UNDER REVIEW
PS: ROBERT WOOD (McDONNELL DOUGLAS)

11/21/85

PAYLOAD ACRONYM LIST

<u>ACRONYM</u>	<u>NAME</u>	<u>DESCRIPTION</u>
ACES	Acoustic Containerless Experiment System	technical demonstration to obtain early microgravity tests of gas transport phenomena in a 3-axis levitation furnace.
ACTS	Advanced Communication Technology Satellite	flight verification of high risk communications technology to support future communication systems.
ADSF	Automatic Directional Solidification Furnace	technology demonstration of directional solidification of magnetic materials, immiscibles, and IR detection materials.
AFE	American Flight Echocardiograph	collects quantitative in-flight data on cardiovascular changes in the crew.
ALE	Atmospheric Luminosity Experiment	investigates the ion chemistry of the atmosphere and orbiter surfaces.
APE	Aurora Photography Experiment	enhance understanding of the geographic extent and dynamics of the aurora.
ARABSAT	ARABSAT	communications satellite of the Arab Satellite Communications Organization.
ARC	Aggregation of Red Cells	studies aggregation of red cells and blood viscosity under low-g conditions.
ART	Amateur Radio Transceiver	establishes communication between radio operator on the Shuttle and operator on the ground.
ASC	American Satellite Company	provides commercial communication service via satellite to continental United States, Hawaii, Alaska, and Puerto Rico.

ASTRO	Ultraviolet Astronomy Telescope (formerly OSS-3)	three-mission program designed to obtain UV data on astronomical objects.
AUSSAT	Australian Communication Satellite	direct broadcast communication satellite which provides services to continental Australia and off-shore territories.
BIOS	Biostack Middeck Experiment	Study of damage to biological materials resulting from the HZE component of cosmic rays.
BRE	Blood Rheology Experiment	technology demonstration of this apparatus to study aggregation of red blood cells and blood viscosity under low-g conditions.
C2-SPACELINES	Commercial Cargo Spacelines	performs launch and other required services for C2 mixed cargo.
C-360	Cinema-360	35mm motion picture camera for the purpose of photographing crew and mission activities.
CANEX	Canadian Payload Specialist Experiment	experiment package flown with Canadian payload specialists on mission 41-G.
CBDE	Carbonated Beverage Dispenser Evaluation	Pepsico, Inc. experiment to evaluate packaging and dispensing techniques for space flight consumption of carbonated beverages.
CBSC	China Broadcasting Satellite	television and sound broadcasting satellite.
CENTAUR	Centaur	General Dynamics hydrogen/oxygen upper stage.
CFES	Continuous Flow Electrophoresis System	demonstrates the technology of pharmaceutical processing in space.
CFMF	Cryogenic Fluid Management Facility	re-usable research facility to establish technology base for 0-g cryogenic fluid management system.

CHAMP	Comet Halley Active Monitoring Program	observe Comet Halley on approximately six STS flights from October 1985 through April 1986.
CLOUDS	Structures Photography Experiments	cloud formation, dissipation and opaqueness observations.
COBE	Cosmic Background Explorer	study the diffuse radiation of the universe.
CPL	Capillary Pump Loop Explorer	determine 0-g performance of a capillary pump loop heat acquisition system.
CRRES	Combined Release and Radiation Effects Satellite	study the upper atmosphere and ionosphere by releasing trace metal vapors.
CST	Contrast Sensitivity Tester	
DARK SKY		conducts sky survey for extended infrared sources, X-ray imaging of galaxy clusters and makes cosmic ray measurements.
DBS	Direct Broadcast Satellite	
DBS LUX		Radio-Tele-Luxembourg direct broadcast satellite.
DMOS	Diffusive Mixing of Organic Solutions	grow crystals of organic compounds for research programs within the 3M Corporation's Science Research Laboratory.
DOD	Department of Defense	
DOD-PATIE	Department of Defense-Pointing and Tracking Integrated Experiment	acquire rapidly moving instrumented targets in space or fixed targets on the ground and the ability to do high precision pointing and tracking with a low power marker laser

EASE/ACCESS	Experimental Assembly of Structures in EVA/Assembly Concept for Construction of Erectable Space Structures	measures the human factors while assembling structures in space during EVA.
EEVT	Electrophoresis Equipment Verification Test	technology demonstration of apparatus to evaluate the effects of electrophoresis of biological cells in 0-g.
ELRAD	Earth-Limb Radiance Experiment	obtain measurements of earth-limb radiance for various positions of the sun from near limb up to 9 degrees below earth horizon.
EML	Electromagnetic Levitation Payload	technology demonstration to observe the flow of the surface of a containerless molten metal.
EOIM-III	Evaluation of Oxygen Interaction with Materials-III	expand and verify Space Station environmental interaction data base to support materials development and systems design.
EOM	Environmental Observation Mission	measure long term variability in the total energy radiated by the sun and determine the variability in the solar spectrum.
EOS	Electrophoresis Operation in Space	produce pharmaceuticals for large scale tests leading to FDA approval and commercial production.
ERBS	Earth Radiation Budget Satellite	collects global earth radiation budget data.
EURECA	Europe Retrievable Carrier	platform placed in orbit for six months offering conventional services to experimenters.
EUVE	Extreme Ultraviolet Experiment	survey the sky in the EUV band (100 - 1,000 angstrom).

FDE	Fluid Dynamics Experiment	
FEE (formerly ECHO)	French Echocardiograph Equipment	obtains on-orbit cardiovascular system data.
FASSC		Ford Aerospace Satellite Services Corporation communication satellite.
FPE	French Postural Experiment	studies sensory-motor adaptations in weightlessness.
FTDI	Fluid Transfer Dynamic Investigation	evaluates fluid dynamics associated with filling capillary/screen retention propellant tanks.
GALAXY-KU	GALAXY-KU Band	Hughes domestic and commercial communication satellite.
GALILEO	GALILEO	investigates the chemical composition and physical state of Jupiter's atmosphere and satellites.
GARD	Gamma Radiation Detection	measures gamma radiation levels in the Shuttle environment.
GAS	Get Away Special	small self-contained payload containers providing conventional support to experiments.
GAS BRIDGE	Get Away Special Bridge	structure in the payload bay that can hold up to twelve GAS canisters.
GLOW	GLOW	atmospheric luminosities investigation.
GLOMR	Global Low Orbit Message Relay	packet data relay satellite.
GOES	Geostationary Operational Environmental Satellite	provides continuous weather coverage of the western hemisphere.
GPS	Global Positioning System	DOD navigation and positioning system.
GRO	Gamma Ray Observatory	investigate extraterrestrial gamma-ray sources.

GSTAR	GSTAR	GTE (General Telephone and Electronics Satellite Corp.) communications satellite.
HBT	Heflex Bioengineering Test	determines proper soil moisture content for maximum growth in 0-g.
HH-G	Hitchhiker (Goddard Space Flight Center version)	GSFC payload carrier for intermediate size experiments attached to the sill of the cargo bay.
HH-M	Hitchhiker (Marshall Space Flight Center version)	MSFC payload carrier for intermediate size experiments attached in the shuttle bay.
HNC	Heavy Nuclei Collector	obtains a sample of actinide nuclei (thorium, uranium, etc.) in cosmic radiation.
HPCG	Handheld Protein Crystal Growth Middeck Experiment	develop techniques to produce in low-G protein crystals of sufficient size and quality to permit molecular analysis by diffraction techniques.
HPTE	High Precision Tracking Experiment	demonstrates ability to propagate a low power laser beam through the atmosphere.
HST	Hubble Space Telescope	observes the universe to gain information about its origin, evolution and disposition of stars, galaxies, etc.
IBSE	Initial Blood Storage Equipment	evaluates changes in blood tissue during various storage conditions.
IEF	Isoelectric Focussing Experiment	gather experimental data on the extent of electro-osmosis in space.
IMAX	Imax, Inc. of Toronto, Ontario, Canada	produces motion pictures of orbiter launch, inflight operations and landings suitable for viewing in IMAX theaters such as the Smithsonian.

IML	International Microgravity Laboratory	microgravity missions devoted to material sciences and life sciences studies.
INSAT	Indian National Satellite System	communication and meteorological satellite.
INTELSAT	International Telecommunications Satellite	international telecommunications satellite network.
IOCM	Interim Operational Contamination Monitor	measures molecular and particle contamination in the Shuttle bay.
IRAS	Infrared Astronomical Satellite	infrared telescope.
IR-IE		infrared video camera used to measure temperature gradients on the orbiter surface.
IRIS	Italian Research Interim Stage	an expendable vehicle capable of placing payloads up to 950 kg into geosynchronous transfer orbit.
IRT	Integrated Rendezvous Radar Target	a target for testing of Shuttle orbiter rendezvous techniques and capabilities in orbit.
ISAL	Investigation of STS Atmospheric Luminosities	determine the spectral content of the orbital luminosity.
ISTP	International Solar Terrestrial Program	performs optical and in-site measurements on the outer atmosphere of the sun, the solar interior, the corona and the solar wind.
ITALSAT	Italian Communication Satellite System	satellite housing telecommunication and propagation experiments.
IUS	Inertial Upper Stage	solid rocket booster developed to place satellites in high orbits.

LAGEOS	Laser Geodynamics Satellite	high precision geographical measurements.
LANDSAT		earth resources monitoring satellite.
LDEF	Long Duration Exposure Facility	free-flying satellites providing accommodations for experiments requiring long-duration exposure to the space environment.
LDEF RETR	Long Duration Exposure Facility Retrieval	retrieve and return the LDEF to earth so results may be analyzed.
LEASECRAFT	Leasecraft	Fairchild modular utility satellite - a shuttle-serviced, low-orbiting space platform for lease.
LFC	Large Format Camera	acquire synoptic, high-resolution images of the Earth's surface.
LM	Long Module	Spacelab element composed of a core segment and an experiment segment.
LS-D	Landsat Repair (Landsat D)	rendezvous, capture, repair, and deploy a Landsat D spacecraft using the STS.
MARC-DN	Measurement of Atmospheric Radiance Camera-Day/Night	test fly TV camera against celestial, earthlimb and ground targets with various lighting conditions.
MARS OBSERVER		return scientific data from Mars orbit.
MAST	Structural Technology Demonstration	demonstrate structural integrity through deployment, retraction and restowage, and develop techniques for distributed control and adaptive control methods.
MEA	Materials Equipment Assembly	conducts materials processing experiments in low-g environment.
MLR	Monodisperse Latex Reactor	produces monodisperse latex particles in the two to forty micron range.

MORELOS	MORELOS	Mexican communication satellite system.
MPES	Mission Peculiar Experiment Support Structure	experiment carrier.
MPSE		experiment in support of the MORELOS payload specialist.
MSAT	Mobile Satellite	provides channel capacity for NASA technology validation experiments and accelerates introduction of commercial mobile satellite service in the U.S.
MSL	Materials Science Laboratory	performs materials processing experiments in low-g.
NOAA	National Oceanic and Atmospheric Administration	provides continuation of Polar Operational Meteorological Satellite System for the Department of Commerce (NOAA).
NOSL	Night/Day Optical Survey of Lightning	optical survey of lightning.
OASIS	OEX (orbiter experiments) Autonomous Supporting Instrumentation System	independent system that can be flown with a payload to acquire and store environment data.
OAST	Office of Aeronautics and Space Technology	demonstration of a large light-weight solar array which is capable of being restowed in flight.
OIM	Oxygen Interaction with Materials	
OMV	Orbital Maneuvering Vehicle	supplements the STS capability for satellite payload delivery, retrieval and maneuvering.

OPEN	Origin of Plasmas in Earth's Neighborhood	obtain the first quantitative assessment of the flow of energy through the geospace environment.
ORION	Orion	Orion Satellite Corporation communications satellite.
ORS	Orbiter Refueling System	demonstrates STS's ability to perform on-orbit satellite refueling.
OSS-2 OXS	Office of Space Science Diffuse X-Ray Spectrometer	conducts x-ray observations on a variety of objects in the 44 to 84 angstrom wavelength region.
OSS-3	Office of Space Science (currently ASTRO)	obtain UV data on astronomical objects.
OSTA-2	Office of Space and Terrestrial Applications	cooperative mission with the Federal Republic of Germany on materials processing experiments in low-gravity.
OSTA-3/5/7	Office of Space and Terrestrial Applications	acquire photographic and radar images of the Earth's surface.
PALAPA	Indonesian Communication Satellite	synchronous satellite communication system for the Republic of Indonesia.
PAM-A	Payload Assist Module A	upper stage designed to deliver up to 4400 lbs to a geosynchronous transfer orbit.
PAM-D	Payload Assist Module D	upper stage designed to deliver up to 2850 lbs to a geosynchronous transfer orbit.
PAM-D II	Payload Assist Module D II	McDonnell Douglas upper stage designed to deliver up to 4160 lbs to a geosynchronous transfer orbit.
PDRS/PFTA	Payload Deployment and Retrieval System/Payload Flight Test Article	first object to be deployed and retrieved by the remote manipulator system and is used to test reaction of RMS joints.

PPE	Phase Partitioning Experiment	study separation behavior of two phase systems generated by the mixture in water of polyglucose and polyethylene glycol.
PVTOS	Physical Vapor Transport of Organic Solids	grow crystalline films on selected substrates of organic solids.
RADARSAT	RADARSAT	collaborative program designed to remotely monitor the oceans, ice and land over a five year period.
RCA DBS	RCA Direct Broadcasting System	satellite system for Radio Corporation of America.
RME	Radiation Monitoring Equipment (formerly Space Radiation Test)	measures gamma radiation levels in the Shuttle environment.
ROSAT	Roentgensatellit	conducts an all-sky survey.
SAS	Space Adaptation Syndrom	measures vestibular function, motion sickness susceptibility and spatial orientation ability during prolonged weightlessness.
SAREX	Shuttle Amateur Radio Experiment	space to ground voice and slow scan TV.
SATCOL		Colombian communications satellite.
SATCOM		RCA communications satellite.
SAX	X-Ray Astronomy Satellite	scientific study of celestial x-ray sources.
SBS	Satellite Business Systems	all digital domestic communication system servicing large industry, the government, etc.
SBTS-A4		Brazilian telecommunications satellite system.

SEMS	Shuttle Environment Monitoring System	measures Space Shuttle cargo bay environment under launch, flight, and landing conditions.
SFPP	Space Flight Participant Program	
SHARE (formerly TEMPS-III-A)	Large, High Capacity Heat Pipe Radiator	evaluate on-orbit thermal performance of a heat pipe radiator element designed for Space Station heat rejection system application.
SHEAL	Shuttle High Energy Astrophysics Laboratory	study of astronomical objects, obtaining images, spectra and timing data on celestial x-ray sources.
SIRTF	Shuttle Infrared Telescope Facility	facility which hosts experiments that increase our understanding of the formation and evolution of stars, planets, galaxies, and unusual galactic objects.
SKYNET	United Kingdom Communication Satellite	military communication satellite.
SL 1	Spacelab 1	demonstrate Spacelab's capabilities for multidisciplinary research.
SL 2	Spacelab 2	demonstrate Spacelab's capabilities for multidisciplinary research and verify system performance.
SL 3	Spacelab 3	dedicated materials processing mission emphasizing 0-g research.
SLS-1	Space Life Sciences Laboratory 1	investigate the effects of weightlessness exposure using both man and animal specimens.
SLS-2	Space Life Sciences Laboratory 2	reflight of SLS-1.
SLS-3	Space Life Sciences Laboratory 3	exploration of the effects of acute weightlessness on living systems.

SLS-4	Space Life Sciences Laboratory 3	generic life sciences laboratory mission.
SMRM	Solar Maximum Repair Mission	conducts a technology demonstration of the STS capability to rendezvous, service, checkout and deploy.
SOT	Solar Optical Telescope	performs very high spatial resolution observations of the sun.
SPACELAB D-1	German Spacelab Mission D-1	first dedicated DFVLR mission (Deutsche Forschungs-und Versuchsanstalt fur Luftund Raumfahrt e.V.).
SPACELAB D-2	German Spacelab Mission D-2	dedicated application and technology science mission.
SPACELAB D-4	German Spacelab Mission D-4	GIRL - German Infrared Radiation Laboratory.
SPACELAB J	Japanese Spacelab Mission	microgravity mission with emphasis on materials processing and life science experiments.
SPACENET	Southern Pacific Satellite Company Communications Satellite	a 3-axis stabilized telecommunication satellite used to provide domestic/commercial common carrier.
SPARTAN- 1	Spartan	x-ray astronomy, medium energy survey mission.
SPARTAN- 2	Spartan	study of solar physics.
SPARTAN- 3	Spartan	ultra violet imaging of a variety of sources.
SPARTAN-HALLEY		search for molecules containing nitrogen, carbon or sulfur and observes the UV spectrum between 2100 and 3400A..
SPARTAN 204		obtains simultaneous measurements of the absolute solar flux, the solar spectral content, the solar helium line shape and band width, and the interplanetary hydrogen and helium glow.

SPARTAN 205		obtains high resolution EUV solar spectra in two dimensions and maps absolute systematic velocities on the sun's disc.
SPARTAN 206		studies high energy physics (broad band x-ray imaging spectrometer).
SPARTAN 207		studies astronomical criteria below 2000 angstrom using the Interstellar Medium Absorption Profile Spectrograph (IMAPS).
SPARTAN 208		measures the sulfur dioxide in the atmosphere of Venus; repeats measurement in 1988 and 1990.
SPARTAN 209		studies cosmic x-ray spectra from selected celestial sources.
SPARTAN 210		study the physical conditions in coronal loops and the fine structure and dynamics of the magnetic field.
SPARTAN 211		studies spectra of faint extended emission-line objects in the wavelength range between 900 and 1150 angstrom.
SPAS-01	German Shuttle Pallet Satellite	demonstrates the utilization of the MBB platform and systems as a carrier for science experiments.
SP PLASMA	Space Plasma Laboratory	
SRL	Space Radar Laboratory	acquires photographic and radar images of the Earth's land and oceanic surfaces.
SRT	Space Radiation Test (now RME)	measure gamma radiation levels in the Shuttle environment.
SSBUV	Shuttle Solar Backscatter Ultra-Violet Instrument	measures ozone characteristics of the atmosphere.

SSC	Solid Surface Combustion	determine flame spread mechanisms and rates over solid surfaces in the absence of gravity-induced free convection and externally imposed flow.
SSIP	Shuttle Student Involvement Projects	student projects flown on Shuttle.
STC DBS	Satellite Television Corp. Direct Broadcast Satellite	direct broadcast satellite subscription TV.
STTP	Life Sciences Space Technology Training Program	develop and encourage interest on the part of college students in space biology and medicine.
SUNLAB	Spacelab 2 Solar Telescope	study small-scale structures on the Sun's surface and measure the coronal helium abundance.
SYNCOM	Hughes Geosynchronous Communication Satellite	provides communication services from geosynchronous orbit principally to the US government.
SYNCOM-SALVAGE		salvage of Syncom IV-3 launched on 5/15/68.
TDRS	Tracking and Data Relay Satellite	NASA Communication Satellite.
TELESAT	Canadian Telecommunication Satellite	communication satellite built by Telesat Canada, 1976, to provide voice and TV coverage in Trans-Canada network of Earth stations.
TELSTAR	AT & T Communications Satellite	AT & T COMSTAR replacement - provides communication services to the continental US, Alaska, Hawaii, and Puerto Rico.
TEMPS-III-A	Large, High Capacity Heat Pipe Radiator	evaluate on-orbit thermal performance of a large heat pipe radiator element designed for Space Station heat rejection system application.
TIS	Teacher in Space	middeck locker supporting the Space Flight Teacher Program's teacher in space.

TLD	Thermoluminescent Dosimeter	obtains gamma ray measurements of the Shuttle environment.
TOPEX	Ocean Topography Experiment	remotely sense the global oceans.
TSS	Tethered Satellite System	demonstrate system capabilities by deploying and retrieving tethered satellite and measuring engineering data from payload on satellite.
UARS	Upper Atmospheric Research Satellite	study the physical processes acting within and upon the stratosphere, mesosphere and lower thermosphere.
ULYSSES	formerly ISPM (International Solar Polar Mission)	investigates the properties of the heliosphere (sun and its environment).
UNISAT (USL)	United Satellite, LTD.	British communications satellite which provides direct broadcast TV services to the BBC and the ITA.
USAT	United States Satellite Corporation	domestic communication satellite system.
USSB	US Satellite Broadcast System	provides direct to home radio and TV broadcasting.
UVAM	Ultraviolet Astronomy Mission	
UVX	Ultraviolet Experiment	measures the galactic and extragalactic contribution to the diffuse ultraviolet background radiation in the 600 - 3200 angstrom region.
VRM	Venus Radar Mapper	globally map the surface of Venus.
WESTAR	Western Union Telegraph Communication Satellite	a c-band satellite to replenish and expand the Westar system (Western Union domestic communication system).

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